| Question 1 | Write a shell program to enter two values from the user and print the addition of the two numbers?  Note: This program works for both integer as well as decimal values. |
| --- | --- |
| Program | read -p "Enter the first number : " x  read -p "Enter the second number : " y  z=`echo $x + $y|bc -l`  echo "----------------------------------------"  echo -e "First number: \t$x"  echo -e "Second number: \t$y"  echo "----------------------------------------"  echo "The sum of the two numbers is $z."  echo "----------------------------------------" |
| Output |  |
| Question 2 | Write a shell program to print the date, list of directories and the current working directory? |
| Program | echo "----------------------------------------"  echo "printing the date."  date  echo "----------------------------------------"  echo "The list of directories are shown below:"  ls  echo "----------------------------------------"  echo "Current working directory is show below:"  pwd  echo "----------------------------------------" |
| Output |  |
| Question 3 | Write a shell script to enter values of any two variables from the user and perform all the basic calculator operations like addition, subtraction, multiplication, division and modulus? |
| Program | read -p "Enter the first number : " x  read -p "Enter the first number : " y  echo "----------------------------------------"  echo -e "First number: \t$x"  echo -e "Second number: \t$y"  echo "----------------------------------------"  z=`echo $x + $y|bc -l`  echo "The sum of the two numbers is $z."  echo "----------------------------------------"  z=`echo $x - $y|bc -l`  echo "The difference of the two numbers is $z."  echo "----------------------------------------"  z=`echo "scale=2; $x \* $y"|bc -l`  echo "The multiplication of the two numbers is $z."  echo "----------------------------------------"  z=`echo "scale=2; $x / $y"|bc -l`  echo "The division of the two numbers is $z."  echo "----------------------------------------"  z=`echo $x % $y|bc`  echo "The modulus of the two numbers is $z."  echo "----------------------------------------" |
| Output |  |
| Question 4 | Write a shell script that takes 2 input values and swap the values using a third variable and without using a third variable? |
| Program | Using a third variable.  read -p "Enter the first number : " x  read -p "Enter the second number : " y  echo "----------------------------------------"  echo "Before swapping, the value of x is $x and the value of y is $y."  echo "----------------------------------------"  z=$x  x=$y  y=$z  echo "After swapping, the value of x becomes $x and the value of y becomes $y."  echo "----------------------------------------"  Without using a third variable.  read -p "Enter the first number : " x  read -p "Enter the second number : " y  echo "----------------------------------------"  echo "Before swapping, the value of x is $x and the value of y is $y."  echo "----------------------------------------"  x=`echo $x+$y|bc -l`  y=`echo $x-$y|bc -l`  x=`echo $x-$y|bc -l`  echo "After swapping, the value of x becomes $x and the value of y becomes $y."  echo "----------------------------------------" |
| Output | The output will be the same for both the programs. |
| Question 5 | Take Basic salary as input where Da is 30 % and HRA 20% of basic salary  calculate his gross salary. |
| Program | read -p "Enter your salary " s  da=`echo "scale=2; 0.3\*$s"|bc -l`  bs=`echo "scale=2; 0.2\*$s"|bc -l`  ts=`echo "scale=2; ($da+$bs+$s)"|bc -l`  echo "-------------------------------------"  echo "Your basic salary is $s"  echo "Your DA is $da"  echo "Your HRA is $bs"  echo "Your gross salary is $ts."  echo "-------------------------------------" |
| Output |  |
| Question 6 | Enter the marks of 5 subjects and find the percentage of the student. |
| Program | read -p "Enter your marks in Math : " m  read -p "Enter your marks in English : " e  read -p "Enter your marks in Hindi : " h  read -p "Enter your marks in Science : " s  read -p "Enter your marks in GK : " g  p=`echo -e "scale=2; ($m+$e+$h+$s+$g)/5"|bc -l`  echo "----------------------------------------------------------"  echo -e "Math\t $m"  echo -e "English\t $e"  echo -e "Hindi\t $h"  echo -e "Science\t $s"  echo -e "Gk\t $g"  echo "----------------------------------------------------------"  echo "Your percentage is $p."  echo "----------------------------------------------------------" |
| Output |  |
| Question 7 | Write a shell script to read a file name from the user and append new content to the file and display the content of the file. |
| Program | read -p "Enter the file name " fn  echo "---------------------------------"  cat $fn  echo "---------------------------------"  echo "Please add more content"  echo "---------------------------------"  cat >> $fn  echo "---------------------------------"  echo "The modified content are as follows"  echo "---------------------------------"  cat $fn  echo "---------------------------------" |
| Output |  |
| Question 8 | Read two strings and concatenate the two string in a third string |
| Program | read -p "Enter the first string " x  read -p "Enter the last string " y  echo "The combined string is $x $y." |
| Output |  |
| Question 9 | Enter the name of the student, passing year and degree marks of studet and store the content in a file. |
| Program | read -p "Enter your name : " name  read -p "Enter your course : " course  read -p "Enter your age : " age  read -p "Enter your passing Year : " year  echo -e "Name\t Course\t Age\t Year"  echo -e "$name\t $course\t $age \t $year" >>info  echo "----------------------------------------------------------------"  cat info  echo "----------------------------------------------------------------" |
| Output |  |
| Question 10 | Enter the temp in fahrenheit and convert it to celsius and vice versa. |
| Program | read -p "Enter the temperature in fahrenheit : " t  f=`echo "scale=2; ($t-32)\*5/9"|bc -l`  echo "The temperature in degree celsius will be $f."  echo "-------------------------------------------"  read -p "Enter the temperature in degree celsius : " t  c=`echo "scale=2; $t\*9/5+32"|bc -l`  echo "The temperature in fahrenheit will be $c."  echo "-------------------------------------------" |
| Output |  |
| Question 11 | Write a shell program to enter the values of two variables and print the larger value. |
| Program | read -p "Enter the value of a : " a  read -p "Enter the value of b : " b  echo "-----------------------------"  if [ $a -gt $b ]  then  echo "The value of a is greater than b that is $a > $b."  echo "-----------------------------"  else  echo "The value of b is greater than a that is $b > $a."  echo "-----------------------------"  fi |
| Output |  |
| Question 12 | Write a shell program to enter the values of two variables and if both the numbers are equal then print both the numbers are equal else print the larger value. |
| Program | read -p "Enter the value of a : " a  read -p "Enter the value of b : " b  if [ $a -ne $b ]  then  if [ $a -gt $b ]  then  echo "The value of a is greater than b that is $a > $b."  echo "---------------------------------"  else  echo "The value of b is greater than a that is $b > $a."  echo "---------------------------------"  fi  else  echo "Both the numbers are equal"  echo "---------------------------------"  fi |
| Output |  |
| Question 13 | Input a number to check a number is even or odd. |
| Program | read -p "Enter the number to check whether it is even or odd " n  if [ $n -gt 0 ]  then  if [ `expr $n % 2` -eq 0 ]  then  echo "The number $n is even."  else  echo "The number is odd."  fi  else  echo "Please enter number greater than 0."  fi |
| Output |  |
| Question 14 | Enter three numbers and check and print the largest number. |
| Program | read -p "Enter the first number : " a  read -p "Enter the second number : " b  read -p "Enter the third number : " c  if [ $a -gt $b ]  then  if [ $a -gt $c ]  then  echo "The number a is the largest number."  else  echo "The number c is the largest number."  fi  else  if [ $b -gt $c ]  then  echo "The number b is the largest number."  else  echo "The number c is the largest number."  fi  fi  OR  read -p "Enter the first number : " a  read -p "Enter the second number : " b  read -p "Enter the third number : " c  if [ $a -gt $b -a $a -gt $c ]  then  echo "The number a is the largest number."  elif [ $b -gt $a -a $b -gt $c ]  then  echo "The number b is the largest number."  else  echo "The number c is the largest number."  fi |
| Output |  |
| Question 15 | Enter the marks of 5 subjects. Find the grade of student based on the following percentage criteria.  Percentage =100 or percentage 90-99 A++  percentage 80-89 A  percentage 70-79 B++  percentage 60-69 B  ….  <40 Fail  Otherwise no such grade. |
| Program | read -p "Enter your marks in Math : " m  read -p "Enter your marks in English : " e  read -p "Enter your marks in Hindi : " h  read -p "Enter your marks in Science : " s  read -p "Enter your marks in GK : " g  s=`expr $m + $e + $h + $s + $g`  p=`expr $s/5|bc`  echo "----------------------------------------------------------"  echo "Your percentage is $p."  echo "----------------------------------------------------------"  if [ $p -ge 90 -o $p -eq 100 ]  then  echo "Your grade is A++".  echo "----------------------------------------------------------"  elif [ $p -ge 80 -a $p -le 89 ]  then  echo "Your grade is A".  echo "----------------------------------------------------------"  elif [ $p -ge 70 -a $p -le 79 ]  then  echo "Your grade is B++".  echo "----------------------------------------------------------"  elif [ $p -ge 60 -a $p -le 69 ]  then  echo "Your grade is B".  echo "----------------------------------------------------------"  elif [ $p -ge 50 -a $p -le 59 ]  then  echo "Your grade is C++".  echo "----------------------------------------------------------"  elif [ $p -ge 40 -a $p -le 49 ]  then  echo "Your grade is D".  echo "----------------------------------------------------------"  else  echo "You failed."  echo "----------------------------------------------------------"  fi |
| Output |  |
| Question 16 | Basic salary as input  If some employee’s basic salary is greater than 50000, then Da is 70% and HRA 20%  If some employee’s basic salary is greater than 20000 and less than 50000 then Da is 60% and HRA 30%  If some employee’s basic salary is less than 20000, then Da is 50% and HRA 30% and calculate his gross salary |
| Program | read -p "Enter your basic salary : " s  if [ $s -gt 50000 ]  then  da=`echo "scale=2; 0.7\*$s"|bc -l`  bs=`echo "scale=2; 0.2\*$s"|bc -l`  ts=`echo "scale=2; ($da+$bs+$s)"|bc -l`  echo "Your gross salary is $ts."  echo "-------------------------------------"  elif [ $s -gt 20000 -a $s -lt 50000 ]  then  da=`echo "scale=2; 0.6\*$s"|bc -l`  bs=`echo "scale=2; 0.3\*$s"|bc -l`  ts=`echo "scale=2; ($da+$bs+$s)"|bc -l`  echo "Your gross salary is $ts."  echo "-------------------------------------"  else  da=`echo "scale=2; 0.5\*$s"|bc -l`  bs=`echo "scale=2; 0.3\*$s"|bc -l`  ts=`echo "scale=2; ($da+$bs+$s)"|bc -l`  echo "Your gross salary is $ts."  echo "-------------------------------------"  fi |
| Output |  |
| Question | Write a shell program to check whether the name input by the user is a file or a directory? |
| Program | read -p "Enter the name : " n  if [ -f $n ]  then  echo "$n is a file."  elif [ -d $n ]  then  echo "$n is a directory"  else  echo "This file or directory does not exist."  fi |
| Output |  |
| Question | Write a shell program that takes the name of the file from the user, if the file exists, display the content in the file, add new content and show content after adding content else create the file if it does not exist? |
| Program | read -p "Enter the name : " n  if [ -f $n ]  then  echo "$n is a file."  if [ -s $n ]  then  echo "Previous content are shown below:"  cat $n  echo "-----------------------------------------------------"  cat >> $n  echo "-----------------------------------------------------"  echo "The modified content are shown below:"  cat $n  else  cat >> $n  echo "-----------------------------------------------------"  echo "New content added."  cat $n  fi  else  touch $n  echo "This file did not exist, so a new file was created just now."  fi |
| Output |  |
| Question | Write a shell program that takes the name of the file from the user to check whether the file has execution permission. If the file does not have execution permission, then assign permission to the file? |
| Program | read -p "Enter file name to check its permission : " n  if [ -x $n ]  then  echo " The given file has execution permission"  else  chmod 744 $n  echo "The file does not have execution permission."  echo "Now the execution permission is given to the file $n."  fi |
| Output |  |
| Question | Write a shell program to check whether the string input by the user is palindrome or not? |
| Program | read x y  c=`echo $y|rev`  if [ $x == $c ]  then  echo "Strings are palindrome"  else  echo "Strings are not palindrome"  fi |
| Output |  |
| Question | Write a shell program to copy content from one file to another file? |
| Program | read s1  read s2  if cp $s1 $s2  then  echo "file copied"  cat $s2  else  echo "not copied"  fi |
| Output |  |
| Question | Write a shell program to check whether a particular user is logged in or not? |
| Program | read -p "Enter the user name : " u  if who| grep $u  then  echo "User is currently logged in"  else  echo "User is not currently logged in"  fi |
| Output |  |
| Question | Write a shell program such that when user enter 1 then list directory command run, when user enter 2 then tty command run, when user enter 3 then date command run else it prints “enter only 1, 2, or 3” using **if else** control structure? |
| Program | read -p "Enter the number : " n  if [ $n -eq 1 ]  then  ls  elif [ $n -eq 2 ]  then  tty  elif [ $n -eq 3 ]  then  date  else  echo "Enter only 1 or 2 or 3"  fi |
| Output |  |
| Question | Write a shell program such that when user enter 1 then list directory command run, when user enter 2 then tty command run, when user enter 3 then date command run else it prints “enter only 1, 2, or 3” using **switch case** control structure? |
| Program | read -p "Enter any number : " n  case $n in  1) echo "ls command"  ls  ;;  2) echo "tty command"  tty  ;;  3) echo "date command"  date  ;;  \*) echo "Enter number either 1, 2, or 3."  ;;  esac |
| Output |  |
| Question | Write a shell program such that when user enter 0-9 then list directory command run, when user enter a-z then tty command run, when user enter 100 then date command run else it prints “enter only 1, 2, or 3” using **switch case** control structure? |
| Program | read -p "Enter any number : " n  case $n in  [0-9]) echo "ls command"  ls  ;;  [a-z]) echo "tty command"  tty  ;;  100) echo "date command"  date  ;;  \*) echo "Enter number either 1, 2, or 3."  ;;  esac |
| Output |  |
| Question | Write a shell program such that when user enter either 1 or 2 or 3 then list directory command run, when user enter either a or b or c then tty command run, when user enter 100 then date command run else it prints “enter only 1, 2, or 3” using **switch case** control structure? |
| Program | read -p "Enter any number : " n  case $n in  [1,2,3]) echo "ls command"  ls  ;;  [a,b,c]) echo "tty command"  tty  ;;  100) echo "date command"  date  ;;  \*) echo "Enter number either 1, 2, or 3."  ;;  esac |
| Output |  |
| Question | Enter the marks of 5 subjects. Find the grade of student based on the following percentage criteria.  Percentage =100 or percentage 90-99 A++  percentage 80-89 A  percentage 70-79 B++  percentage 60-69 B  ….  <40 Fail  Otherwise no such grade.  **Using Switch case** |
| Program | read m1 m2 m3 m4 m5  total=`expr $m1 + $m2 + $m3 + $m4 + $m5`  per=`expr $total / 5`  echo $per  case $per in  100) echo "Your grade is A++.";;  9[0-9]) echo "Your grade is A++.";;  8[0-9]) echo "Your grade is A.";;  7[0-9]) echo "Your grade is B++.";;  6[0-9]) echo "Your grade is B.";;  5[0-9]) echo "Your grade is C++.";;  4[0-9]) echo "Your grade is C.";;  \*) echo "You failed."  esac |
| Output |  |
| Question | Write a shell program to print the number from 1 to 10 using a **for** loop? |
| Program | for((i=1;i<=10;i++))  {  echo $i  } |
| Output |  |
| Question | Write a shell program that takes the start value and the end value from the user and print the number from start value to end value using a for loop? |
| Program | echo "Enter the start and end value :"  read start  read end  echo "----------------------------------"  echo "The numbers are shown below:"  echo "----------------------------------"  for((i=start;i<=end;i++))  {  echo $i  } |
| Output |  |
| Question | Write a shell program to print the words of a given sentence one by one using a for loop? |
| Program | for w in we are good students  {  echo $w  } |
| Output |  |
| Question | Write a shell program to print the all number for a given range using a for loop? |
| Program | # for loop using range  for i in {5..10}  {  echo $i  } |
| Output |  |
| Question | Write a shell program to print the all number for a given sequence with start, step and end values using a for loop? |
| Program | for i in $(seq 20 2 50)  do  echo $i  done |
| Output |  |
| Question | Write a shell program that uses positional parameters and takes input from the user and display the result? |
| Program | echo "Use of positional parameter or command line arguments"  echo $1  echo $2  echo $3  echo $4  a=$2  echo $a |
| Output |  |
| Question | Write a shell program that uses positional parameters and takes input from the user and display the sum of all the input numbers? |
| Program | echo "Enter the numbers for which you want to sum: "  sum=0  for i in $\*  do  sum=`expr $sum + $i`  done  echo "-------------------------------------"  echo "The sum of all the numbers is $sum." |
| Output |  |
| Question | Write a shell program to print the number from 1 to 10 using a **while**loop? |
| Program | i=0  while [ $i -le 10 ]  do  echo $i  i=`expr $i + 1`  done |
| Output |  |
| Question | Write a shell program to print the number from 10 to 1 using a **for** loop? |
| Program | i=10  while [ $i -ge 1 ]  do  echo $i  i=`expr $i - 1`  done |
| Output |  |
| Question | Write a shell program to print the number from 10 to 1 using a **until while** loop? |
| Program | i=1  until [ $i -ge 10 ]  do  echo $i  i=`expr $i + 1`  done |
| Output |  |
| Question | Write a shell program that takes a string input from the user and print each character one by one using a while loop? |
| Program | read -p "Enter the string : " s  i=1  z=`echo -n "$s"|wc -m`  while [ $i -le $z ]  do  echo $s|cut -c$i  i=`expr $i + 1`  done |
| Output |  |
| Question | Write a shell program to find the factorial using a **while** loop? |
| Program | read -p "Enter the number: " n  temp=1  while [ $n -gt 0 ]  do  temp=`echo $temp\*$n|bc`  n=`expr $n - 1`  done  echo $temp |
| Output |  |
| Question | Write a shell program to find the factorial using a **for** loop? |
| Program | read -p "Enter the number: " n  temp=1  for ((i=1;i<=$n;i++))  do  temp=$((temp\*i))  done  echo $temp |
| Output |  |
| Question | Write a shell program that prints the digit at an odd place when a user enters a large digit number? |
| Program | read -p "Enter the number : " x  l=`echo -n $x|wc -c`  echo "The length is $l."  i=1  while [ $i -le $l ]  do  digit=`echo $x|cut -c$i`  echo "The digit at position $i is =$digit."  i=$((i+2))  done |
| Output |  |
| Question | Write a shell program that counts the occurrence of a particular digit in a large number entered by the user? |
| Program | read -p "Enter the number : " x  l=`echo -n $x|wc -c`  echo "The length is $l."  read -p "Enter the number which you want to check the occurence : " n  counter=0  i=1  while [ $i -le $l ]  do  digit=`echo $x|cut -c$i`  if [ $digit -eq $n ]  then  counter=`expr $counter + 1`  fi  i=$((i+1))  done  echo "counter := $counter" |
| Output |  |
| Question | Write a shell program to check whether the number entered by the user is palindrome or not? |
| Program | read -p "Enter any number to check whether the number is palindrome or not? : " n  temp=$n  rev=0  while [ $n -gt 0 ]  do  r=`echo $n%10|bc`  rev=`echo $rev\*10 + $r |bc`  n=`expr $n / 10`  done  echo $rev  if [ $temp == $rev ]  then  echo "The number $temp is a palindrome number."  else  echo "The number $temp is not a palindrome number."  fi |
| Output |  |
| Question | Write a shell program that uses the “break” command? |
| Program | for ((i=1;i<=10;i++))  do  {  if [ $i -eq 5 ]  then  break;  fi  echo $i  }  done |
| Output |  |
| Question | Write a shell program that uses the “continue” command? |
| Program | for ((i=1;i<=10;i++))  do  {  if [ $i -eq 5 ]  then  continue;  fi  echo $i  }  done |
| Output |  |
| Question | Write a shell program that uses function? |
| Program | echo "Function example"  add()  {  echo "Hello world"  }  echo call the function  add |
| Output |  |
| Question | Write a shell program that uses a function to add two numbers? |
| Program | add()  {  a=$1  b=$2  c=`expr $a + $b`  echo $c  }  echo call the function  add 100 300 |
| Output |  |
| Question | Write a shell program that takes two numbers from the user and print the table from the first number to the second number? |
| Program | read -p "Enter the first number : " x  read -p "Enter the second number : " y  table()  {  echo "Table of $1"  for ((i=1;i<=10;i++))  {  z=`echo $1\*$i|bc`  echo "$1 \* $i = $z"  }  echo "----------------------------------"  }  for i in $(seq $x 1 $y)  {  table $i  } |
| Output |  |
| Question | Write a shell program that takes five inputs from the user, store them into an array and then finally display the list of all elements in the array? |
| Program | for ((i=0;i<5;i++))  {  read arr[i]  }  echo ${arr[\*]} |
| Output |  |
| Question | Write a shell program that takes five inputs from the user, store them into an array and then finally display the list of all elements in the array? |
| Program | sum=0  for ((i=0;i<5;i++))  {  read arr[i]  sum=`expr $sum + ${arr[i]}`  }  echo ${arr[\*]}  echo "The sum is $sum." |
| Output |  |